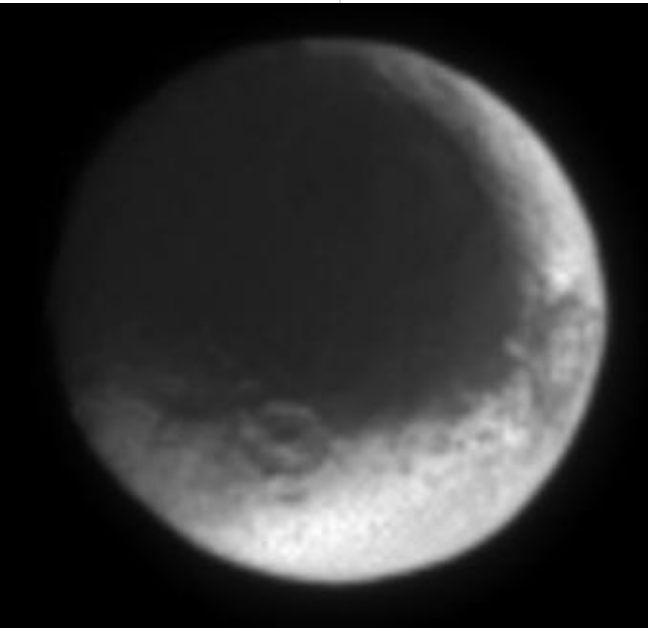


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## Iapetus: Saturn's two-faced moon



*This image of Iapetus was taken in visible light on July 3 with Cassini's narrow angle camera from a distance of 3 million kilometers (1.8 million miles).*

The moon with the split personality, Iapetus, presents a perplexing appearance in the latest images snapped by the Cassini spacecraft.

One hemisphere of the moon is very dark, while the other is very bright. Scientists do not yet know whether the moon is being coated by foreign dark material or being resurfaced from within Iapetus' own interior.

Iapetus is one of Saturn's 31 known moons. Its diameter is about 2.5 times smaller than our own

moon's diameter at 1,436 kilometers (892 miles across). The latest image was taken in visible light with the Cassini spacecraft narrow-angle camera on July 3 from a distance of 3 million kilometers (1.8 million miles) from Iapetus.

During Cassini's four-year tour, the spacecraft will continue to image Iapetus and conduct two close en-

counters. One of those encounters, several years from now, will be at a mere 1,000 kilometers (622 miles).

When the astronomer Cassini discovered Iapetus in 1672, he noticed almost immediately that at one point in its orbit around Saturn it was very bright, but on the opposite side of the orbit the moon nearly disappeared. He correctly deduced that the trailing hemisphere is composed

of highly reflective material, while the leading hemisphere is strikingly darker.

This sets Iapetus apart from Saturn's other moons and the moons of Jupiter, which tend to be brighter on their leading hemispheres. Voyager images show that the bright side, which reflects nearly 50 percent of the light it receives, is fairly typical of a heavily cratered icy satellite. The leading side is coated with a much darker, redder material that has a reflectivity of only about 3 to 4 percent.

One scenario for the outside deposit of material would involve dark particles being ejected from the little moon Phoebe and drifting inward to coat Iapetus. One observation lending credence to an internal origin is the concentration of material on crater floors, which implies that something is filling in the craters. In one mode proposed by scientists, methane could erupt from the interior and then become darkened by ultraviolet radiation.

Iapetus is odd in other respects. It is the only large Saturn moon in a moderately inclined orbit, one that takes it far above and below the plane in which the rings and most of the moons orbit. It is less dense than objects of similar brightness, which implies it has a higher fraction of ice or possibly methane or ammonia in its interior.

Cassini's orbits around Saturn will be shaped by gravity-assist flybys of Titan. Close flybys of Titan will permit high-resolution mapping of Titan's surface with the Titan imaging radar instrument, which can see through the opaque haze covering that moon to produce vivid topographic maps of the surface.

Cassini's next encounter is a Titan flyby on Oct. 26.

For images, videos and the latest news on the Cassini-Huygens mission, log on to <http://saturn.jpl.nasa.gov> and the Cassini imaging team home page, <http://ciclops.org>.

## Aura launch delayed again

The launch of NASA's Aura spacecraft atop a Boeing Delta II rocket was scrubbed early Wednesday morning due to an issue with one of the two batteries on the second stage of the launch vehicle. At approximately three minutes before the scheduled liftoff time, as the batteries were being transferred to internal power, the battery current level dropped below prescribed limits, triggering a launch hold.

Two of Aura's four instruments, the Microwave Limb Sounder and the Tropospheric Emission Spectrometer, were designed, built and tested at JPL, and they will also be operated by the Lab.

Engineers and mission managers assessed the situation Wednesday to decide a date for the next launch attempt. Two options were considered. The first was to attempt a launch on Thursday morning, July 15, during a three-minute launch window that opened at 3:01:59 a.m. PDT. The second option under consideration was to stand down until Saturday, July 17, due to range conflicts at Vandenberg Air Force Base.

Weather was a concern for a launch attempt on Thursday morning, as the forecast called for only a 60 percent probability of acceptable weather conditions. The primary concerns were thick clouds and the possibility of triggered lightning in the launch area due to the remnants of daytime thunderstorm activity in Southern California.

## ESD names divisions, managers

*Philip Garrison,  
the new Engineering  
and Science  
Directorate  
deputy director.*



The results of the reorganization within the Engineering and Science Directorate have been announced.

Director John Beckman said that effective July 5, Philip Garrison is the new deputy director. Garrison was previously the manager of the Mechanical Engineering and Research Division, where he was responsible for mechanical, propulsion and thermal control systems engineering, hardware design, development, and test and research and advanced development in supporting technologies for planetary spacecraft, instruments and mobility systems.

Effective Monday, Sept. 27, the following technical divisions have been established, with their corresponding managers:

Systems and Software Division 31, Jan Chodas, manager. Previously, she was the assistant flight system manager for flight software for the Mars Exploration Rover project during the development phase and then transitioned to the role of post-landed development manager after the rovers landed successfully. Prior to this assignment, Chodas managed the Mission Software Systems Section in the Information Technologies and Software Systems Division.

Telecommunications Division 33, Kent Kellogg, manager. Kellogg is currently managing the Spacecraft Telecommunications Equipment Section 336. Previously, he was the Scatterometer Projects manager (QuikSCAT and SeaWinds), where he was responsible for implementing scatterometer instruments, managing instrument-spacecraft integration and test, launch preparations and subsequent on-orbit operations. Before joining the Scatterometer Projects Office, Kellogg supervised Division 33's Spacecraft Antenna Group.

Robotic Systems Division 34, Dr. John Klein, manager. Klein joined JPL in 1980 and has held a number of line and project positions since that time. He has been the supervisor of the Power Systems and Power Electronics Groups, deputy manager of the Power Systems Section,

manager of the Avionic Equipment Section, assistant division manager for flight projects within Division 34 and the deputy manager of Division 34.

Mechanical Systems Division 35, Kendra Short, manager. Short has been at JPL for more than 15 years. She worked on the Mars Pathfinder mission as a systems engineer, then transferred to Section 352 to work as a mechanical cognizant engineer for the Cassini mission, the Pathfinder mission and SRTM. Short became supervisor of the Structures and Configuration Group in 1997, then in 2000 became the deputy manager of Section 352, supporting the flight projects being performed in the section. In 2003, she became the collector subsystem manager for the Space Interferometry Mission instrument.

Project and Engineering Services Division 37, Dr. Magalene (Mag) Powell-Meeks, manager. Powell-Meeks was the deputy to the vice president of the NASA/JPL Services Line of Business for Lockheed Martin Information Technology. She was responsible for ensuring outstanding service, performance excellence and customer satisfaction in support of the federal government, most specifically for the NASA/JPL customer.

Instruments and Science Data Systems Division 38, Dr. Tom Luchik, manager. Luchik has been at JPL since 1985. He is currently the deputy manager of the Mechanical System Engineering and Research Division. Prior to that he was the manager of the Science and Technology Development Section in the Mechanical Systems Engineering and Research Division. He has managed the development of the Wide Field Infrared Explorer and the Confined Helium Experiment, a shuttle-based flight experiment in fundamental physics. Luchik also supervised the Low Temperature Science and Engineering Group at JPL.



# News Briefs

## Proia named acting CFO

STEVE PROIA has been appointed the Laboratory's acting chief financial officer and director for business operations. He replaces FRED MCNUTT, who announced earlier this month that he is leaving the Laboratory for personal reasons. Proia will serve until a permanent replacement is named.

McNutt's resignation will be effective Oct. 14. Until that date, he will serve as special assistant to JPL Deputy Director GENE TATTINI. McNutt, who joined JPL in 1999, will complete several special assignments and will assist in the search for his replacement.

Proia, deputy director for Business Operations and Human Resources and co-chair of JPL's Business Management Council, has 28 years of experience in all phases of contract management and administrative operations. He received bachelor's and MBA degrees from the University of Maryland.

## Elachi garners NASA medal

JPL Director DR. CHARLES ELACHI was awarded NASA's Outstanding Leadership Medal last month. The medal is awarded for notably outstanding leadership that affects NASA's technical or administrative programs. The award may be given for an act of leadership, for sustained contributions based on a leader's effectiveness, for the productivity of the leader's program, or for the leader's demonstrated ability in developing the administrative or technical talents of other employees.

## Menard honored by alma mater

JPL retiree WESLEY MENARD was recently selected as Cal Poly Pomona's Outstanding Aerospace Engineering Department Alumnus for 2004. He was selected for the honor by the Cal Poly faculty because of his achievements in the field of aerospace engineering. Menard received the award at a university banquet where he delivered the keynote address to faculty, students and alumni. Menard earned a bachelor of science in aeronautical engineering from Cal

Poly Pomona in 1961 and a master's of science in engineering from UCLA in 1963. He worked at JPL for 38 years. Menard held numerous senior positions at JPL, including managing the Solar Energy and Semiconductor Materials Section, the Thermochemical and Biological Systems Section and the Applied Mechanics Technologies Section. He retired in 2001 as manager of the Mechanical Systems Engineering and Research Division. His technical career includes research and project engineering in high-temperature gas dynamic radiation, molecular and atomic physics, thermochemistry and aeroacoustics. Cal Poly also honored Menard in 1982 by naming him Distinguished Alumnus from the School of Engineering.

## Health Net drug benefits discussed

In response to inquiries from JPL staff, Health Net will provide presentations on Lab later this month on their prescription drug benefits. ALAN JACOBS, Health Net's director of pharmacy operations, will speak Monday, July 26, at 1:30 p.m. in conference room 167, and Tuesday, July 27, at 3 p.m. in von Kármán Auditorium.

Topics of discussion will include escalating prescription costs and what Health Net is doing to ensure quality while controlling costs; how to use the Health Net prescription plan; retail and mail order; brand vs. generic—dispense as written, mandatory generics (cost differential if brand is requested by member); Health Net's recommended drug list (determining what is covered, troubleshooting and what happens if a prescription is requested that is not on the recommended drug list); and prior authorization turnaround time. For more information, call the Benefits Office at ext. 4-3760.

## Dodger game for JPL on Aug. 21

The JPL Store has tickets for Caltech/JPL Day at Dodger Stadium on Saturday, Aug. 21. The festivities start at 11 a.m. with a carnival for the whole family, followed by the game between the Dodgers and the Atlanta Braves at 1:10 p.m. Tickets are \$4, and are also available at the credit union in Building 218 and the credit union branch in La Cañada.

# Special Events Calendar

## Ongoing Support Groups

Alcoholics Anonymous—Meetings are available. Call the Employee Assistance Program at ext. 4-3680 for time and location. Caregivers Support Group—Meets the first Thursday of the month at noon in Building 167-111 (the Wellness Place). For more information, call the Employee Assistance Program at ext. 4-3680. Codependents Anonymous—Meeting at noon every Wednesday. Call Occupational Health Services at ext. 4-3319. Gay, Lesbian and Bisexual Group—Meets the first Friday and third Thursday of the month at noon in Building 111-117. Call the Employee Assistance Program at ext. 4-3680 or Randy Herrera at ext. 3-0664.

Parents Group for Children With Special Needs—Meets the second Thursday of the month at noon in Building 167-111 (the Wellness Place).

Working Parents Support Group—Meets the third Thursday of the month at noon in Building 167-111. For more information, call the Employee Assistance Program at ext. 4-3680.

## Friday, July 16

“Root Cause Trends for Serious On-Orbit Anomalies”—Julia White, senior engineering specialist for the Aerospace Corporation's Cross-Program Research Office, will speak at 11:30 a.m. in Building 180-101. Her work addresses industry-wide issues in the fields of on-orbit spacecraft anomalies and lifetimes, lessons learned and satellite development comparisons, as well as program-specific concerns requiring a cross-program perspective.

Von Kármán Lecture Series—Cassini Deputy Project Scientist Dr. Linda Spilker will present “The Rings of Saturn” at 7 p.m. in Pasadena City College's Vosloh Forum, 1570 E. Colorado Blvd. For more information, call Public Services at ext. 4-0112.

## Monday, July 19

“How to Finance Your Child's College Education”—David Levy, director of financial aid at Caltech, will speak at noon in von Kármán Auditorium. He will address the availability of student financial aid, what types are available, how much financial aid you might expect, who qualifies and how to navigate the often complex financial aid application maze. This talk will be geared to families with junior-high to high-school age children.

## Tuesday, July 20

“Scientific Discovery on the Global Grid: A Computing Paradigm for the 21st Century”—Dr. Tom Yunck and Elaine Dobinson of the Exploration Systems Autonomy Section, and Brian Wilson, technical lead for the General Earth Science Investigation Suite, will speak at noon in the 167 conference room.

## Wednesday, July 21

JPL Library Orientation—Come to Building 111-104 from 11:30 a.m. to noon for an overview of the Library's products and services, and learn how to access numerous electronic resources from your desktop. For more information, call the Library reference desk, ext. 4-4200. TIAA/CREF Enrollment Meeting—This workshop, to be held at noon in Building 180-101, is designed to assist employees newly eligible for the TIAA/CREF retirement plan with selection of investment options and the completion of their enrollment forms.

“TIAA Traditional in a World of Stocks and Bonds”—This 10 a.m. presentation in conference room 180-101 will look at how TIAA Traditional fits into an investor's overall asset allocation. Topics include equity returns and the high level of volatility that accompanies them, the correlation of returns among asset classes, why adding different types of equity funds offers only limited added diversification, and why TIAA Traditional fills this diversification role. To reserve a seat, visit [www.tiaa-cref.org/moc](http://www.tiaa-cref.org/moc) or call (877) 209-3140, ext. 2614.

## Thursday, July 22

Software Peer Review Class—This one-day course in T-1705 will train project element managers and cognizant engineers in how to conduct walk-throughs, peer reviews and inspections of software products, from planning and conducting to creating both detailed and summary reports. Checklists will be provided for various types of inspections and reviews. To register, go to <http://hr/et/index.html>; call Brian Vickers, ext. 3-0877, for more information.

## Thursday, July 29

Clogging Class—Meeting at noon in Building 300-217. For more information, call Shary DeVore at ext. 4-1024.

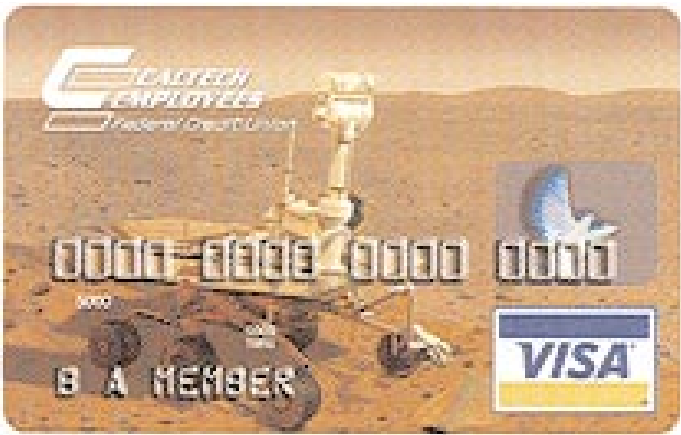


JPL Stories—Mike Sander, manager of the Exploration Systems and Technology Office, will present “Mariner Mars '64, First Spacecraft Images from Another Planet:

The Adventure Begins.” at 4 p.m. in the Library, Building 111-104. When Mariner Mars '64 returned 22 images of Mars, it began a planetary imaging adventure that has excited the public and helped make solar system exploration a central element of the U.S. civilian space program. If you have questions about the story series or wish to participate, call Teresa Bailey at ext. 4-9233.

# Show your MER pride

The Caltech Employees Federal Credit Union this month unveiled this new Visa card design dedicated to the successful Mars Exploration Rovers mission.



# Lab staff help burn victims



Dutch Slager / JPL Photolab

With the donations from about 140 JPLers, the JPL Fire Department recently raised about \$2,200 through T-shirt sales to benefit Firefighters Quest for Burn Survivors. The group visited the Lab in June as part of its tour of Southern California firefighting and emergency services organizations. Starting third from left are JPL firefighters Jacques Hinton, Tracie Grove, Captain Michael Tyler, Carlos Ulloa and Don Fowler. Third from right is JPL Protective Services Supervisor Joe Courtney. Those in white shirts are burn survivors who joined the tour.



**You’ve been with JPL for 41 years. What were some of the early lessons you learned from the project managers you worked under?**

The technical challenges in those early days were immense. I learned from the early practitioners in the space program, such as John Casani, Bill Shipley and Casey Mohl. They were all bright, disciplined thinkers who emphasized understanding problems in great technical depth. In fact, we’re still following the principles that they laid down 40 years ago.

**When you addressed the Return to Flight team last year, you emphasized the importance of forging new leadership for NASA’s space flight missions. How have you set out to accomplish that? What is something that you learned from them that you still use today?**

Casey, for instance, would have coffee every morning in the cafeteria at 7:15 a.m. Everyone was welcome to come, sit down, have coffee and ask questions. Guess what I do? People know that I come in to the cafeteria around 7:30 a.m., and, if they want to talk, they know where they can find me.

**Do you remember making mistakes or having missteps when you were working for any of those legendary project managers? If so, how did they respond?**

I was the mission assurance manager for the Voyager project and John Casani was the project manager. Casani has a very systematic approach in examining issues or problems. When you had to present a problem and the potential solution, Casani would very quickly work the discussion to the boundary of your understanding of the issue. He always worked it with you so that you were discovering the soft spots in your solution. It was always a constructive learning experience with Casani.

**So, the response wasn’t to slap you down?**

No. It was very much to help me. I had the opportunity of a terrific on-the-job learning experience.

**So, you got to see the processes modeled?**

Yes. I learned incrementally. I absorbed it all, piece by piece. I didn’t really have to think about what I needed to learn; I was lucky enough to see it modeled over time.

We recognize that in today’s environment of short development schedules, engineers don’t necessarily have the luxury of incremental learning. With new projects frequently on the horizon, we need to supplement their hands-on experience with training.

To that end, we at JPL have compiled many years of experience in our Flight Project Practices and Design Principles and we have developed a project manager’s class—where the role and responsibilities of project management are explained to newly appointed and prospective project managers. This class is popular and provides a detailed look into the life of a project manager. As a result of this class, we have increased our pool of engineers ready for a project manager assignment, and we have also had engineers recognize that project management may not be for them. This unexpected outcome from this class is beneficial to both the employees and the Laboratory.

**As someone whose responsibility it is to groom project managers, what do you look for? What do you expect in people who want to be project managers?**

First of all, they must have the necessary technical and leadership skills and personal integrity.

You also must be able to inspire the confidence of the project team who is going to work for you. Take Pete Theisinger, the [former] project manager of the Mars Exploration Rovers, for example. He took on the job of launching two spacecraft from a dead start in 37 months. His team members had to have faith that he was going to lead them and look after them. Those are the qualities I look for.

**How do you spot the real leaders?**

You have to watch their careers. What challenges have they faced? What commitments have they made and have they met those commitments? What have they deliv-

A conversation with



Tom Gavin

Tom Gavin joined JPL in 1962. Currently the Associate Director of Flight Projects and Mission Success, he has served in a long list of engineering and management positions, including mission assurance manager for both the Voyager and Galileo projects, spacecraft system manager for the Cassini mission to Saturn, and deputy director for JPL’s space and Earth science programs. His previous assignment was director of space science flight projects.

Gavin was honored in 2003 as a fellow of the American Astronautical Society at their national convention in Houston. He has received NASA’s Exceptional Service and Outstanding Leadership medals, and Aviation Week & Space Technology magazine’s Laurels Award for outstanding achievement in the field of space.

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ered? In many ways, this is a natural selection process. Around here, if you say you want to be a project manager, the first question is always going to be: “What experience do you have? What have you delivered?”

The fact that you want to be a project manager doesn’t mean you are going to get the job. Part of the experience set for a project manager has to be delivery responsibility—what have you delivered successfully? Did you do it on time? Did you do it on money, be it hardware or software?

In addition to delivery experience, we are looking for the total package. How were your communications skills? How did you deal with problems? How did you deal with stress? It’s those kinds of things.

**As you were going through that process yourself, was there a point where you said, “This is going to make or break me?”**

Sure—again, for me it was Voyager. I was named mission assurance manager when I was 30 years old, and I was on the mission until it launched in 1977. Because of my work in the first couple years of the project, I was given responsibility for the radiation hardening of the spacecraft from all of the mission’s electronics. They said, “Okay, you go do this job.” I had that development responsibility from 1974 until launch.

Voyager leveraged everything in the rest of my life at JPL. On the other hand, if Voyager had not gone well, they might very well have said, “Well, we saw what he did.”

**At the time, did you think you were in a little over your head?**

I thought I was in way over my head. I was thinking, “You want me to do what?” Voyager was a real stretch for me.

**Don’t you think there’s irony here? One of the things you’re talking about is making certain that people are prepared to advance to the next level. On the other hand, you’re talking about stretching, about making a leap.**

That’s right. You’ve got to make people stretch a little. I decided early on that I love to run scared. Someone said to me once, “Why would you want to run scared?” I said, “Because it makes me think of all the things that could go wrong, so I can deal with them before they do.” Voyager was my biggest stretch. With the Cassini project, on the other hand, there was no reason that I couldn’t do well. I was the spacecraft manager for Cassini, and by that time I was well prepared for it.

**I’m sure you still found a way to scare yourself.**

I did. Before Cassini, I had always worked on the technical side of the house, where the emphasis was on meeting the engineering requirements first and foremost. Cost was secondary. Now I had a different role. That was the first time on a project that I had to manage the money, and it was definitely a stretch in that sense. So, I poured a lot of effort into learning about cost estimating and cost performance. I stumbled for a while but ultimately succeeded.

**But in the end you returned money on Cassini. How did you manage that?**

Some people will argue that we just had a lot of money to work with. I would say we were disciplined. From the start on Cassini, I knew what reserves we had for the spacecraft. The budget was \$611 million, and \$71 million of that was reserve. We made a series of decisions about how we would implement the project, and what type of management systems we would put in place to make certain we understood where the money was.

We did a lot of fixed-price contracting, for example. So, we said, “Let’s make sure we get the requirements right the first time, because if we fix-price this and then we go back and change requirements, we’re going to hemorrhage money.” Some of the contractors bet that we couldn’t discipline ourselves, but we did. We spent the first two years of the project making certain we understood the requirements and had the right design.

**So, you delivered the goods. Then you had to leave the project when it was time for operations. How does it feel to hand off a project to someone else?**

You just walk away from it. You get the new management ready, and then you walk away. It was interesting with Cassini because as we were approaching the launch, I would warn the younger staff, “You’re about to experience a feeling of separation.” There were as many

as 700 of them on the project team at one point. I would say to them, “You’ve been working now for five or six years with all of these people. You’re a part of this great Cassini team here at JPL. We’re going to launch it, and then all of this is going to go away. You’re going to have a sense of loss. You need to be prepared for that.”

**How was it for you, personally?**

Actually, when we came back from Cassini, it was kind of funny. Just imagine it: You’re the leader of the band. You’ve got everybody watching you. You’re down at the Cape. You’ve got the headphones on and you’re launching the spacecraft. Everybody is cheering and high-fiving, right?

Then I get back to JPL and walk into my office. Do you know what I saw in the office? Boxes and boxes and boxes. The guy who was the manager for operations came by and said, “Hi, welcome back. When can you be out of here?”

When I came back from Voyager, it was the same thing. I had been down at the Cape for four months. I showed up back at JPL, walked up to the Voyager Mission Support area and my badge wouldn’t work. I rang the bell. The girl said to me, “Can I help you? Who are you and why are you here?”

**So, I guess the only way to get through that is to find the next project?**

That’s right. Projects end. That’s our reality. But I love it. Listen, we are privileged. Everybody who works for this agency is privileged. We’re privileged to serve the American people the way we do. It sounds corny, but look at what the American people have allowed us to do. We need to do our very, very best. We should kick our personal interests aside. We’re doing these things in the name of science and for the American people. I never forget that.



# One NASA tackling competition issue

*Editor's note: This article was submitted by NASA's One NASA Team. JPL's point of contact is Cyndy Chinn.*

On the One NASA survey, many employees identified the use of competition at NASA as a barrier to collaboration and information sharing. Their feedback led to the creation of One NASA Action 1c/1d: Program Priorities and Resources/Selecting Competing Projects.

Placed in perspective, NASA's science enterprises have long used competition and peer review to successfully identify the best approaches to address some of the scientific challenges within the agency's vision. More recently, many new opportunities for competition by individuals and organizations at NASA centers are arising with the birth of the agency's new space exploration vision. NASA is faced with the issue of competition on a daily basis as it seeks to balance the benefits of surfacing the best ideas and obtaining best value with the potentially adverse effects of hoarding knowledge, duplicating capabilities, inadequately maintaining critical infrastructure and building organizational stovepipes. To address this issue, a Competition Working Group has been created to focus on how competition is used at NASA.

"We are seeking to get a better understanding of the costs and benefits of internal competition so that our agency can best use it in a judicious manner," said Steve Pearson, a member of the One NASA Implementation Team and team lead for the group. NASA's chal-

lenge is finding the optimal balance between competition and cooperation. This is a very challenging task given the mix of signals being received. Individuals at centers must compete for project funding and the use of various agency resources, yet simultaneously promote cross-center teamwork.

The Competition Working Group will make recommendations and participate in the implementation of changes to current competitive practices that are assessed as unhealthy to One NASA principles. The more than 20 Competition Working Group participants, including representation from various centers and enterprises, identified three competitive environments for detailed study: Science and Technology, Programs and Projects and Institutional Investments. Each competitive environment was assigned to a specific sub-team that will submit initial findings and draft recommendations by the end of June 2004.

Once the recommendations have been developed, the Competition Working Group will meet with senior agency leadership to begin a dialog that will optimize the effectiveness and success of the overall effort. If you would like to send input to the Competition Working Group, e-mail [OneNASAComments@nasa.gov](mailto:OneNASAComments@nasa.gov).

For more information about the One NASA effort, visit [www.onenasa.nasa.gov](http://www.onenasa.nasa.gov). Your feedback and participation is critical to the effort's success. Carrying out the new exploration vision depends on it.

## Service awards

For the period of April through May 2004 the following JPL recipients celebrated 25 or more years of service and were invited to attend a luncheon and ceremony in their honor on May 25.

40 years: Dale Boggs, Jan Loreman, Richard Woo.

35 years: Joseph Beerer, Christopher Leng, Dora Montano, Philip Moynihan.

30 years: Arden Acord, James Arnett, Toshio Fujita, Ramon Garcia, Ronald Gillette, Michael Janssen, Danny Low, Ramachandra Manvi, Joanne Mintz, Cheryl Teramae.

25 years: Anil Agrawal, Charles Beswick, Patrick Beyer, Thomas Bickler, John Cucchissi, Bonnie Dean, Salvador Distefano, Bobbie Fishman, Steven Gunter, Sheryl Jackson, Ross Jones, Edward Litt, Robert Losey, Martha Mancilla-Wackley, Derek McMahon, Robert McMillan, John Roth, Mark Schaefer, Jeffrey Schroeder, Gregg Vane, Joseph Wiclawek.

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## Letters

I would like to thank my JPL friends and co-workers for their expressions of sympathy on the recent passing of my mother. My thanks also to the Employee Services & Recognition Office for the lovely plant.

Cary Loewenstein

## Classifieds

### For Sale

APT. CLEARANCE: household & camping items, tools, Farberware stainless steel coffee pot, electric dinner bun warmer; buy one item & get one of equal or lesser value free. 626/793-1895, Albert.

BICYCLE, road, Cannondale R400, 60 cm, circa '95, alum. frame w/RXS components, new tires, drive train could use tuneup. \$290/obo. 315/450-3309 or jaystock@umich.edu.

CAMERA, digital, Veo1300, 1.3M, 16M memory, vgc, CDs & cables, sell due to upgrade. \$25/ obo, 16M Canon memory extra. 626/304-9249, eve.

CANOE, Old Town, Katahdyn model, 16', burgundy, \$500. 957-7742.

CHILDREN'S ITEMS: wooden puzzles; books; videos; girl's toys; girl's vanity table, \$20; girl's Little Tykes toy box, \$30; girl's new sandals, \$10; new hiking books; humidifier, \$25; Hepa unit with filters, \$75; all exc. cond.; med. dog house, \$30. 249-6248.

CLOTHES: down vest, L, \$15; black ice Gore-Tex shell jacket, M, \$30; BI down parka, XL, \$40; cotton l/s field shirt, L, \$15; hooded rain poncho, L, \$20; rain pants, XXL, \$15; duofeld l/s shirt, XL, \$10; Polartec fleece pant,s XL, \$10; sweatpant,s LX, \$7; Totes raincoat, M/L, \$10. 626/355-4967.

CLOTHES, infant: jacket, red/navy blue, zip-up w/hood (old navy), size 2T, exc. cond., \$5/obo; sweater, sky blue w/navy trim, buttons, size 3T, \$1/obo; zipper shoes, Spongebob motif, size 11M, exc. cond., \$6/obo; photos avail. 626/791-6101.

COMPUTER DESK, on wheels, cherry veneer, O'Sullivan model 61925, exc. cond., like new; sell for best offer. 626/449-0997.

DIET TAPES, Jenny Craig, set of 14, \$25; CONTROL CENTER, computer power, 5 power switches + 1 master switch, 5 surge-protected outlets + 2 modem/fax/phone jacks, new, \$20; CARD SHUFFLER, Johnson, collectible, all-metal construction w/carved-wood dowel handles, stands ~6" handle-high, and ~9" by 6", \$35. 790-3899.

DODGER TICKETS, up to 4 seats in Loge 164, row J, from my season ticket package, available for most remaining games, \$14 ea. 542-9828 or kimandgene@earthlink.net.

DRESSER, 2 detachable mirrors w/hooks, 9 drawers, gd. cond., 5' 9" W x 1'19" D x 2' 6.5" H w/o mirrors, 6' 3" w/mirrors, \$165/obo; NIGHTSTANDS (2), 2 drawers, pulout table, gd. cond., 2' W x , 1' 14" D x , 1' 10" H, pics avail., \$65 ea., \$100 both/obo, set \$250/obo. 626/445-7216 or LTANEAR@hotmail.com.

FURNITURE: 2-piece Bassett sectional (1 pc. is a sleeper), floral print, photo & dimensions available, cushions need new covers, rest in gd. cond., \$300/obo. 626/791-6101.

GRANITE BLOCKS, 2, each is 2 1/2" x 7 1/2" x 7 1/2", \$15 each. 352-4033, after 5.

INFANT SEAT for swing set, full bucket, commercial quality, heavy molded rubber, riveted at hanger points, \$85 new on web, sell for \$40. 323/255-3226.

MISC: ornately carved oak desk, 50" W x 24"D w/2 matching bookcases, 50" H x 25" W x 12" D, \$500; Techline office furni., white, 6 pcs., \$350; Spanish hand-made rug, 7' x 9', bright pink & orange, \$200; tall wood-framed mirror, \$25; mission oak server, 38 W x 20 D x 37 H, \$300; 2 ceramic lamps, dusty rose, \$30; 626/584-0860, day; 626/794-3144, eve, Donna.

MISC: Kenmore 90 Series washing machine 1999, vg cond., \$75; animal carrier for transport, lg., used once, \$50; hamster cage, small, \$5; hamster cage, lg., \$10. 790-2915, Dick.

MISC: mtn. bikes, 3, \$40/ea; children's bike, \$20; wood bed frame w/box spring & matr., \$75; metal bed w/box spring & matr., \$40; bedside table, \$25; glass end tables, \$20/ea.; antique secretary desk, \$150; lamps, \$15

each. 626/429-3677 or bettyrs@earthlink.net. MATTRESS, Sealy Posturepedic, twin w/box and frame, \$175; COOKTOP, GE, \$125; exhaust hood, kitchen, 42," \$85; all items in exc. cond. 248-4637.

MISC: photo vest, lots of pockets, M, \$30; Tenba camera bag, \$15; camera fanny pack, \$15; 2 Lowe Pro bags, \$10/\$25; small Tamrac bag, \$10; metal slide box, holds 150, \$7; slide box, holds ~ 300, \$14; Nikon 8008, \$200; Nikon 6006, \$150; various Nikon lenses, Cokin and special effects filters, various prices. 626/355-4967.

MISC: turkey roaster, black iron, like new, \$8; covered aluminum cooking kettle, 5 qt., \$8; sleeping bag, inside like new, \$10; 9" skillet, stainless steel, copper clad, \$4; food chopper, \$8. 626/793-1895.

MOUNTAIN BIKE, Trek, 820, 13", RST, Capa front shock, Shimano Promax shifters/levers, blue/silver, barely used, new, \$270-\$300, sale, \$120. 626/840-5413, Ross, leave message.

MOVING SALE: work tables, 2, 21" D x 29" H x 7' L, sturdy, good-looking, \$35 ea.; dining rm. table, 32" x 50", teak, \$60; garment bag, \$20; photo vest, lg., \$35; lt. table, \$35; dark-room printing easels, set 4, \$35, matboard holder, custom-made, \$25, hand matcutter, Logan, \$13, Slik w/point-shoot trigger head + 2 quick release posts, \$60. 626/355-4967.

ORGAN, Yamaha 415 electronic console w/13 pedals, 3 keyboards, 144 rhythm patterns, pd. \$7,500, sacrifice \$2,000; PORT REPLICATOR, for IBM Thinkpad, works w/T20, T21, A20, A21, or X, R series, like new, \$85;

CONTROLLER CARD, Ultra ATA w/cable, fits into 32-bit PCI 2.1 or 2.2 expansion slot on motherboard, brand new, \$20. 790-3899.

REFRIGERATOR, white 18 cu. ft., Maytag, top freezer, ice maker hookup, 4 yrs. old, \$300/obo; BEDROOM SET, headboard, lovely triple dresser, 2 good-size nightstands, maple, made by Stanley, all in exc. cond. 626/599-8473, 2-8 p.m. weekends, all day weekends.

SCUBA EQUIPMENT, ladies, only used once, 2 pc. wetsuit, \$120; fins, \$15; booties, size 7, \$10; snorkel, \$5; mask, \$5; XS gloves, \$7, pictures available. 661/297-2988, Wendy or wendalynn@moose-mail.com.

SCULPTURES of wizards, 3, ceramic, exc. cond., not antiques but are unique, only 200 of each in the world, each is different, holds a small clear ball in his hand, has a beard, and is about 10" H; for Lord Of The Rings fans, \$150 ea. 352-4033, after 5.

SEWING MACHINE CABINET for Sears Kenmore model 1750; LAWN MOWER, manual push style with grass catcher; both gd. cond., best offer. 952-8455.

THEATER TICKETS, 2, for Little Shop of Horrors, Ahmanson Theatre, Aug. 26, 8 p.m., seats in mezzanine, orig. \$140 + fees for pair, sell \$100. 790-8523.

TROPICAL FLOWERS, plumerias, variety of colors and sizes; shell gingers. 626/444-6156, Annie & Bob DePonte.

### Vehicles / Accessories

'79 BAYLINER Santiago Offshore 2250 boat, 21 ft., Cuddy Cabin, newly upholstered cushions, seats 6, sleeps 4; only 400 hrs. on original Volvo Penta 225 Hp engine/outdrive; great for cruising, camping, skiing; kept in dry storage at Lake Mohave; extras incl. spare prop, dual batteries, trailer, VHF radio, cover, etc.; orig. owner, \$6,990/obo. 626/454-3628.

'95 CHEVROLET Lumina, 6 cyl., 4 spd., auto, pwr. steering/breaks/seats/door locks/mirror/window, a/c, cc, stereo, am/fm, airbags, ABS, lean, \$2,600. 626/254-8704 or 795-5378.

'98 FORD Windstar, 95K mi., automatic, a/c, red, ABS, airbag, radio/tape, vg cond., \$6,500. matuska@ppd.cz.

'95 FORD Club Wagon E150 XLT, V8, dark gray, good cond., seats 8, power windows & locks, cruise control, remote/alarm, CD, 140K mi., \$3,600. 626/797-8990.

HITCH, Equal-i-zer sway control, complete system, the best sway control hitch available, exc. cond., \$160. 626/359-7666.

'00 HONDA Civic EX, 2 dr., gd. cond., 5 speed, silver, 81K mi. am/fm/CD, sunroof, 4 brand new tires, \$7,500/obo. 468-9243.

'93 HONDA Civic, 4 cyl., 5 speed, a/c, power locks, stereo w/cass., 148K mi., gd. cond., full records, \$1,800. 957-2437, Kevin.

'89 MERCEDES BENZ 260E, 4-door, gold, 147K original miles; garage kept, interior perfect, looks and runs great; new tires, brakes;\$4,500. 626/794-6860.

'91 NISSAN 300ZX, twin turbo, V6, white, automatic, leather seats, power doors/locks/windows/steering, ABS, clean inside and out,

served at Foothill Nissan for past 6 years, \$6,800. 323/385-3617, Heriberto Corona. '97 PLYMOUTH Grand Voyager SE minivan, V6, 3.3L, automatic, gold, 92K mi., front wheel drive, 2nd sliding door, 7 passenger, a/c, rear air, pwr steering/windows/door locks, tilt wheel, cruise, am/fm stereo/cass., 6-CD player, dual front airbags, 4-wheel ABS, roof rack, privacy glass, 2 folding built-in child safety seats, rear window defroster/wiper, alloy wheels, gently used, \$7,000. 626/797-9846 or dedicatedmama@hotmail.com. '92 PLYMOUTH Sundance, 91K mi., 4 dr., automatic, a/c, beige, airbag, radio, tape, good runner, \$1,200. matuska@ppd.cz. '95 and '97 SATURNS, 300 and 4300. 626/379-3503, Erik Rambach. '93 SEADOO Jet Ski, 3-seated bombardier, low hours of operation, trailer and cover included, \$3,700. 626/296-6803. '99 TOYOTA Camry LE, auto, a/c, am/fm/cass./CD, cruise cont., all power, 76.5K mi., vg cond., new tires + battery, \$8,500/obo. 831-2923. '02 VOLVO V4 wagon, only 13,200 mi., 4-cyl., 1.9L turbo, silver color, a/c, stereo/cassette/CD, dash cover, exc. cond., garage parked, all service records, 15K service completed, new rear brakes \$16,790. 626/355-5631, Tim.

### Lost and Found

LOST: Canon Powershot 410 digital camera, last seen Friday, July 2. Ext. 4-5976, John.

### Wanted

BOOKS, used or new, paperback or hardback, romance, science-fiction, mystery, etc. 248-0178, engineerbob4449@yahoo.com.

CARPOOLERS from La Verne area, leave La Verne about 6 a.m., leave Lab about 3:30 p.m. Ext. 3-2555, Dawn.

COMPUTER HELP to troubleshoot and restore health to home PC, Studio City area, will pay reasonable hourly fee. 980-1638.

HOUSE to rent/lease in Temple City, 3 bd., need by 9/1. 626/574-1495.

HOUSE, apt., guesthouse, townhouse or condo to rent or lease, 3 bd., 2 ba., willing to move in now or wait couple months, \$2,000 max. 909/964-3998, Alex.

NANNY to care for 1-yr-old girl and 10-mo.-old boy, loving and experienced person to provide 3 days of child care/week in our home in the NE Pasadena area, must be non-smoker & have reliable transportation. 626/811-8723, Farrah or 626/296-3185, Diana, (Español).

SPACE INFORMATION/memorabilia from U.S. & other countries, past & present, for personal use. 790-8523, Marc Rayman.

VANPOOL RIDERS from the W. Covina/Covina/ Azusa area, leaves W. Covina (Mall) at 6 a.m., 2nd pickup at Azusa (Costco), arrives at JPL between 6:45 and 7 a.m. Ext. 3-3456, Suzanne or 4-4334, Denise.

VOLLEYBALL PLAYERS, coed, no beginners please, Tues. nights 8 to 10 p.m. at Eagle Rock High School, \$4/nt. 956-1744, Barbara.

### For Rent

ARCADIA apt., 2 bd., 1 ba., garage, remodeled kitchen, refrigerator/washer/dryer in unit, a/c, dishwasher; spacious, walking distance to shops, exc. neighborhood, no pets, water/gardener/trash included, \$1,350 + utilities & security deposit. 626/576-7333.

ARCADIA, large studio, detached, separate entry, furnished, kitchen, laundry facilities, no pets, non-smokers, shared utilities, \$850. 626/574-0226.

EAST PASADENA, 2 bd., 1 ba. + lg. office (20 x 12), a/c, built-ins, new carpet/windows, freshly painted in & out, enclosed back yard + lg. fenced area for RV or boat, 2-car garage + 2-car carport, all newly painted, near Target store, no pets, owned by JPL retiree, see to appreciate, \$1,575. 626/358-1469, 626/864-1789 or danleeyinyang@aol.com.

GLENDALE house, 2 bd., 1 ba., 15 min./JPL, LR, DR, small office, covered & screened play/patio area, garage for 1 car, water/gardener paid, \$1,100. 249-3602.

HIGHLAND PARK/Los Angeles, 2 bd., 1 ba., refurbished, hardwood floors, granite counter, fridge, stove, washer, dryer, hillside view w/600 sq. ft. balcony, \$1,500/2 people, \$1,300/1, utilities included. 323/340-1489.

LA CANADA house, 3 bd., 3 ba., detached garage, new addition w/gourmet kitchen, > 2,000 sq. ft. dishwasher, a/c, laundry hookups, fireplace, spacious family rm., private yd. w/fruit trees, La Cañada schools, avail. 8/1,

\$3,000, water & gardener incl. 626/798-7276. MONTROSE apt., 2 bd., 1 ba., a/c, garden, off-street pkg., laundry, charming, view, trash/water/gardener paid, 10 min./JPL, walking distance to Montrose Mall, \$1,195. 248-4637. MONTROSE apt., 1 bd., 1 ba., parking, stove, a/c, no pets, available approx. 8/1, \$825, owner pays water and trash. 248-9561.

MONTROSE house, large 2 bd., 1 ba., hardwood floor, newer lg. kitchen opens to deck in backyard, 2-car gar., garden-like backyard w/stone fireplace in covered area, washer/dryer, 10 min. to JPL, walking distance to Montrose Mall, \$2,200. 269-2672 or 541-0325.

PASADENA duplex, bottom floor, 850 sq. ft., 1 bd., garage parking, automatic gate, lots of storage in basement & 2nd garage, free use of washer/dryer and wireless broadband access, walking dist. to Paseo Colorado + Old Town, \$1,150, all util. included, possible discount for yard work. 626/264-2714, Jason.

SAN MARINO house, 3 bd., 2 ba., 2-car gar. w/automatic opener, newly painted, remodeled kitchen, dishwasher, a/c, laundry hookups, fireplace, spacious family rm., overlooking yard, no pets, exc. neighborh'd & school district, \$3,200 + util. & security deposit. 626/576-7333.

SUNLAND apt., large, 1 + 1, all like new, walk-in closet, hall cabinets, air, park, laundry, new carpet, dining area, full kitchen, built-in oven/cook top, 6-unit bldg, \$795. 248-7610.

TEMPLE CITY home, 3 bd., 2 ba., cul-de-sac, living rm., family rm, dining area w/brick fireplace, kitchen w/dishwasher, new stove w/vent, laundry rm., back patio w/yd. auto, sprinklers, 2-car gar. w/auto. opener, Temple City school district, new roof/blinds/ drapes/ceiling/gates, new paint in & out, \$2,200, incl. gardener and trash service. 626/590-6055, Cathy.

TUJUNGA home, 3 bd., 2 ba., 2,000 sq. ft., 2-story, gorgeous, private, hillside, 2-car attached garage, lg. lot, lots of parking, stove, dishwasher, heating/cooling, fireplace, beautiful lg. yard & garden, washer/dryer hookups, will consider pet, \$2,200, \$2,500 security, available mid-Aug., prefer lease, will consider month-to-month. 352-3840, Jim.

### Real Estate

COLORADO, 10+ level acres near Rio Grande, NM border, 2 adjacent, 5-acre parcels on St. Hwy 248, will sell one or both for \$1K/acre/obo. 626/254-1550.

### Vacation Rentals

ARROWHEAD cabin, lake view, 6 max., \$140/wkends., \$350/wk., others available, security/cleaning deposit required. 818/952-6221, Mon-Thur., 909/337-1036, Fri-Sun.

BALBOA ISLAND, cute 2 bd., 1 ba., apt, weekly July-Sept., fully furn., slps 5, covered deck, laundry, steps to bay + canal, \$1,200-\$1,500/wk. 626/429-3677 or bettyrs@earthlink.net.

BIG BEAR LAKEFRONT luxury townhome, 2 decks, tennis, indoor pool/spa, beautiful master bd. suite, slps. 6. 949/786-6548.

CAMBRIA house, ocean front, exceptional white water view, accom. up to 4 people, all amenities provided. 702/256-1359, ereynolds2@cox.net.

GREEN VALLEY LAKE cabin, sleeps 6, near Big Bear, furnished, cable TV, fully equipped kitchen, fenced deck BBQ, pets OK, trout fishing, swimming, hiking, \$100/nt. 949/859-2237 or 323/258-4464.

HAWAII, Maui condo, NW coast, ocean front view, 25 ft. fr. surf, 1 bd. w/loft, compl. furn., phone, color TV, VCR, microwave, d/w, pool, priv. lanai, slps. 4, laundry fac., low season rate \$115/nite/2, high season \$130/ nite/2, \$15/nite/add'l person. 949/348-8047 or jackandrandy@cox.net.

MAMMOTH, Snowcreek, 2 bd., 2 ba., + loft, slps. 6-8, fully eq'p'd kitchen incl. microwave, D/W, cable TV, VCR, phone, balcony w/mtn. view, Jacz., sauna, streams, fishponds, close to Mammoth Creek, JPL disc'nt. 626/798-9222, 626/794-0455 or valeriee@caltech.edu.

FLORIDA condo in New Smyrna Beach, fully furnished, 2 bd., 2 ba., full kitchen, half hour to Cape Canaveral, quiet, relaxing, overlooking beach, BBQ, pool, game room, great ocean view, easy walk to stores and restaurants, sleeps 6, avail. weekly or monthly. 760/439-7821, Darlene or dhauge@yahoo.com.

OCEANSIDE condo, on the sand, charming, 1 bd., panoramic view, walk to pier or harbor, pool/spa, game room, slps. 4. 949/786-6548.

ROSARITO BEACH condo, 2 bd., 2 ba., ocean view, pool, tennis, short walk to beach on priv. rd., 18-hole golf course 6 mi. away, priv. secure parking. 626/704-3906.